1. Alignment and Adjustments

1-1 Adjustments

1-1-1 General Alignment Instructions

Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as vertical size, horizontal size, and focus. Observe the picture and check for good black and white details. There must be no objectionable color shading: If color shading is present, demagnetize the receiver. If color shading persists, re-do purity and convergence adjustments.

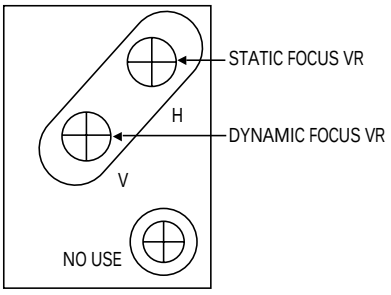
Note :
1. This '4. Alignment and Adjustments' applies to S58A chassis applications.
2. AC Power Supply: 100~230 V
3. This service manual has been written on the basis of domestic remote-control model adopting S58A chassis. Depending on sales location and product specifications, some of specifications herein may be changed.

1-1-2 Focus Adjustment

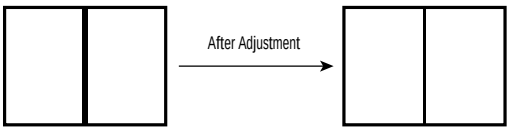
S58A contains a dynamic focus circuit. When CRT PCB, FBT or CRT is replaced, be sure to adjust in the following sequence:

Dynamic Focus Adjustment

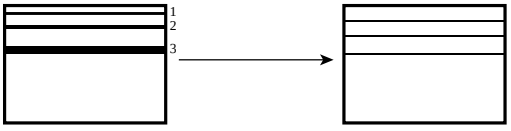
1. Input a crosshatch pattern.
2. Select "Standard" from the menu,
3. Turn the Static Focus VR clockwise to set it to its maximum.
4. Turn the Dynamic Focus VR counterclockwise to set it to its maximum.
5. Turn the Static Focus VR counterclockwise slowly for the clearest center vertical line.



<FBT FOCUS PACK>



6. Turn the Dynamic Focus VR clockwise slowly for the clearest third line.



7. Check for the FOCUS of entire screen. If necessary, re-do adjustments 3~6.

1-1-3 Screen Voltage Adjustment

1. Use a DC multi-meter to identify RK, GK, BK. And then adjust FBT Screen VR so that the highest voltage becomes 175 Vp-p.

1-1-4 White Balance Adjustment

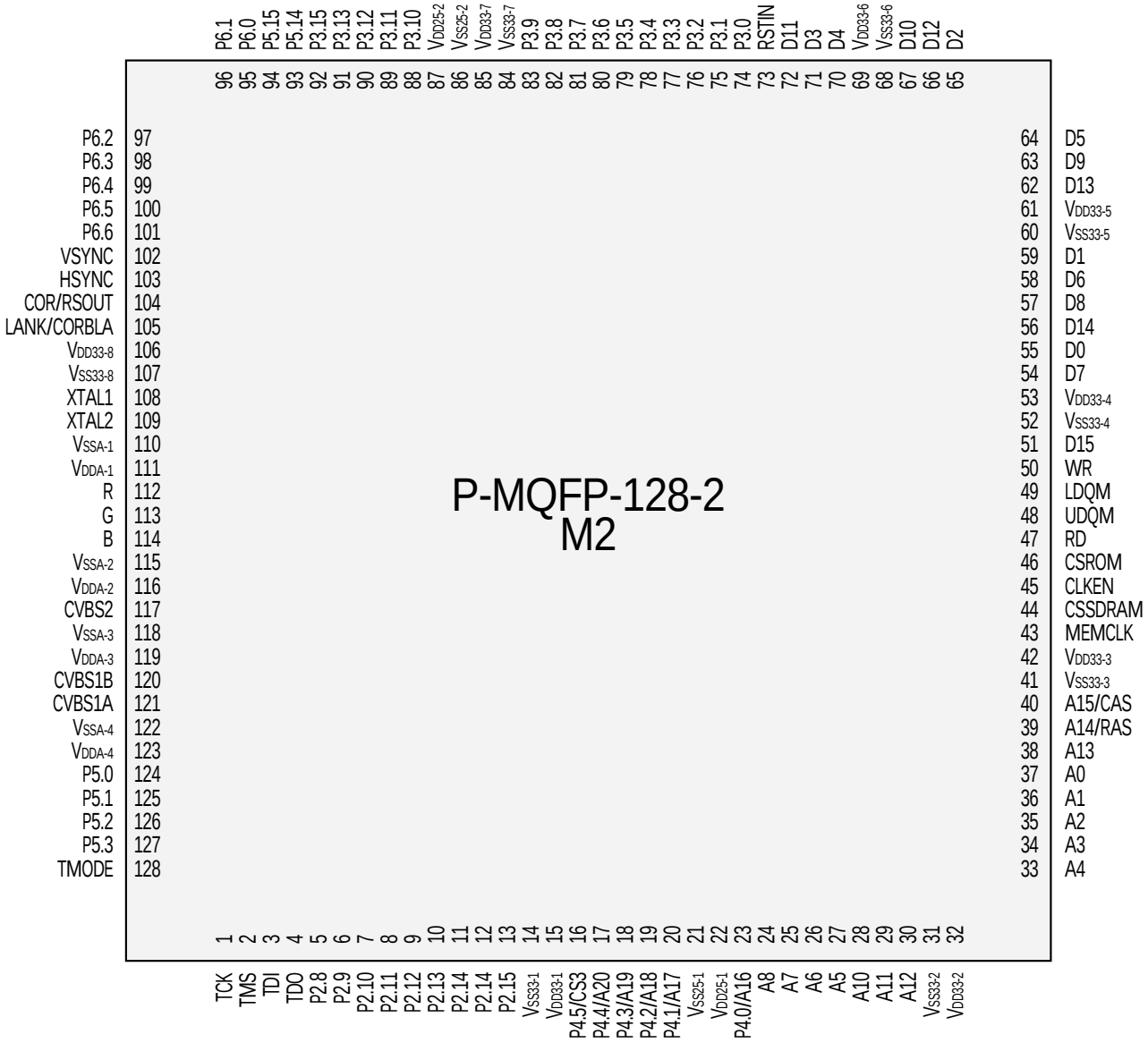
1. Select “Standard” from the menu.
2. Input an 100% White pattern.
3. In standby, press the remote-control keys in the following sequence:
   Display → Menu,Mute, Power on the TV set.
4. Warm up the TV set at least for 30 minutes.
5. Input a stair signal.
6. Use the Volume +/- buttons on the remote-control to select R Drive,G Drive,B Drive,Sub Cont.
7. Adjust Low-Light while viewing the darker side of screen.
8. Use the Volume +/- buttons on the remote-control to select Rcutoff,Gcutoff,Bcutoff,Sub Brt.
9. Adjust High-Light while viewing the brighter side of screen.
10. If not proper, re-adjust White Balance.
11. Press the Memory button to exit.

1-1-5 Sub-Brightness Adjustment

1. In standby, press the remote-control keys in the following sequence:
   Display → Menu → Mute → Power on the TV set.
2. Use the Channel Up / Down buttons to receive the sub bright adjustment signal.
3. Use the Volume +/- buttons to select SBT.
4. Press the Menu or Mute button on the remote control to adjust so that the seventh step on the right of screen cannot be seen.
5. Press the Memory button to exit.

1-2 MICOM PINNING

1-2-1 MICOM PINNING (SDA6001 B12)



1-2-2 MICOM MODULE PIN ALIGNMENT

PIN NO	PAL MODULE	PIN NO	PAL MODULE	PIN NO	PAL MODULE
1	SC1-ID(AV1/DVD1-ID)	23	MT SW1	45	GND
2	SC2-ID (AV2)	24	MT SW2	46	D-COIL
3	SC3-ID(AV3/AV3S-ID)	25	PT SW1	47	MAIN_POWER
4	F/B SW1	26	PT SW2	48	FAV-ID/FS-ID
5	F/B SW2	27	GND	49	HEADPHONE-ID
6	SDA3	28	SDA1	50	S-MUTE
7	SCL3	29	SCL1	51	S-RESET
8	GND	30	DEF SW1	52	GND
9	5VB	31	DEF SW2	53	VGA-ID
10	GND	32	DEF SW3	54	KEY1
11	HS2	33	GND	55	KEY2
12	VS2	34	SPOT	56	IR
13	GND	35	SDA2	57	GND
14	OSD/TTX-F/B	36	SCL2	58	DVR CON. CLOCK
15	OSD/TTX-R	37	WP/STOP	59	DVR CON. STROBE
16	OSD/TTX-G	38	S-RESET2	60	DVR CON. DATA OUT
17	OSD/TTX-B	39	STD 5V	61	DVR CON. DATA IN
18	DTV/DVD2-ID	40	HDD_TEMP	62	DVRSTD_POWER
19	V-RESET	41	LED1	63	SUB_POWER
20	TTX CVBS	42	LED2	64	DVR RESET
21	GND	43	TILT		
22	MAIN AFT	44	1080i SW		

1-2-3 M2 VCC & GND

	Pin(Voltage, Description)		Current	Remark
Standy by	2.5V	- Digital : 21,87 (Digital core)	150mA	- Idel mode : 2.5mA
		- Analog : 111	100mA	
Operation	2.5V	- Analog : 116,119,123		
	3.3V	- Digital : 14,32,42,53,61,69,85,106	150mA	
GND	Digital	- 20,86	-	- Digital core(2.5V)
		- 13,31,41,52,60,68,85,107	-	- for pads (3.3V)
	Analog	-110	-	- 2.5V
		-115,118,122	-	- 2.5V

1-2-4 MICOM PORT ASSIGNMENT

NO	FUNCTION	ASSIGN	*IN/OUT*	ACTIVE H/L	EXPLANATION
1	TCK	TCK	IN	-	CLOCK FOR JTAC INTERFACE
2	TMS	TMS	IN	-	CONTROL SIGNAL FOR JTAG INTERFACE
3	TDI	TDI	IN	-	DATA INPUT FOR JTAG INTERFACE
4	TDO	TDO	OUT	-	DATA OUTPUT FOR JTAG INTERFACE
5	P2.8/EXT0 IN	NC	-	-	
6	P2.9/EXT1 IN	PVRSTD_PO	OUT	LOW	DVR STAND-BY REGULATOR SWITCHING CONTROL
7	P2.10/EXT2 IN	S3PRESET	OUT	HIGH	S3P9428 RESET
8	P2.11/EXT3 IN	5VB CHECK	IN		SLAVE VCC CHECK POINT
9	P2.12/EXT4 IN	DATA IN	IN	-	DVR CONTROL DATA IN
10	P2.13/EXT5 IN	DATA OUT	OUT	-	DVR CONTROL DATA OUT
11	P2.14/EXT6 IN	STROBE	OUT	-	DVR CONTROL STROBE
12	P2.15/EXT7 IN	CLOCK	OUT	-	DVR CONTROL CLOCK
13	VSS33	DGND	-	-	DIGITAL GND FOR PADS
14	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
15	P4.5/CS3	CS3	OUT	LOW	CHIP SELECT FOR SECOND STATIC MEMORY
16	P4.4/A20	A20	OUT	-	EXT MEMORY ADDRESS BIT20
17	P4.3/A19	A19	OUT	-	EXT MEMORY ADDRESS BIT19
18	P4.2/A18	A18	OUT	-	EXT MEMORY ADDRESS BIT18
19	P4.1/A17	A17	OUT	-	EXT MEMORY ADDRESS BIT17
20	VSS25	2.5V	-	-	DIGITAL GND FOR DIGITAL CORE
21	VDD25	A16	-	-	DIGITAL VCC FOR DIGITAL CORE
22	P4.0/A16	A8	IN/OUT	-	BOOTSTRAP CONTROL / EXT MEMORY ADDRESS BIT17
23	A8	A7	OUT	-	EXT MEMORY ADDRESS BIT8
24	A7	A9	OUT	-	EXT MEMORY ADDRESS BIT7
25	A9	A6	OUT	-	EXT MEMORY ADDRESS BIT9
26	A6	A5	OUT	-	EXT MEMORY ADDRESS BIT6
27	A5	A10	OUT	-	EXT MEMORY ADDRESS BIT5
28	A10	A11	OUT	-	EXT MEMORY ADDRESS BIT10
29	A11	A12	OUT	-	EXT MEMORY ADDRESS BIT11
30	A12	DGND	OUT	-	EXT MEMORY ADDRESS BIT12
31	VSS33	3.3V	-	-	DIGITAL GND FOR PADS
32	VDD33	A4	-	-	DIGITAL VCC FOR PADS
33	A4	A3	OUT	-	EXT MEMORY ADDRESS BIT4
34	A3		OUT	-	EXT MEMORY ADDRESS BIT3

NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	EXPLANATION
35	A2	A2	OUT	-	EXT MEMORY ADDRESS BIT2
36	A1	A1	OUT	-	EXT MEMORY ADDRESS BIT1
37	A0	A0	OUT	-	EXT MEMORY ADDRESS BIT0
38	A13	A13	OUT	-	EXT MEMORY ADDRESS BIT13
39	A14/RAS	A14/RAS	OUT	-	EXT MEMORY ADDRESS BIT14/ROW ADDRESS STROBE FOR SDRAM
40	A15/CAS	A15/CAS	OUT	-	EXT MEMORY ADDRESS BIT15/COLUMN ADDRESS STROBE FOR SDRAM
41	VSS33	DGND	-	-	DIGITAL GND FOR PADS
42	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
43	MEMCLK	CLK-SDRAM	-	-	100MHZ CLOCK FOR SDRAM
44	CSSDRAM	CS-SDRAM	-	LOW	CHIP SELECT FOR SDRAM MEMORY
45	CLKEN	CLK-ENABLE	-	-	ENABLE FOR SDRAM MEMORY CLOCK
46	CSROM	CS-ROM	-	LOW	CHIP SELECT FOR ROM
47	RD	RD-ROM	-	LOW	EXTERNAL MEMORY READ STROBE FOR ROM
48	UDQM	WR-DISABLE	-		WRITE DISABLE FOR HIGHBYTE
49	LDQM	WR-DISABLE	-		WRITE DISABLE FOR LOWBYTE
50	WR	WR	-	LOW	WRITE ENABLE FOR FOR SDRAM
51	D15	D15	-	-	EXT MEMORY DATA BIT15
52	VSS33	DGND	-	-	DIGITAL GND FOR PADS
53	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
54	D7	D7	-	-	EXT MEMORY DATA BIT7
55	D0	D0	-	-	EXT MEMORY DATA BIT0
56	D14	D14	-	-	EXT MEMORY DATA BIT14
57	D8	D8	-	-	EXT MEMORY DATA BIT8
58	D6	D6	-	-	EXT MEMORY DATA BIT6
59	D1	D1	-	-	EXT MEMORY DATA BIT1
60	VSS33	DGND	-	-	DIGITAL GND FOR PADS
61	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
62	D13	D13	-	-	EXT MEMORY DATA BIT13
63	D9	D9	-	-	EXT MEMORY DATA BIT9
64	D5	D5	-	-	EXT MEMORY DATA BIT5
65	D2	D2	-	-	EXT MEMORY DATA BIT2
66	D12	D12	-	-	EXT MEMORY DATA BIT12

NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	EXPLANATION
67	D10	D10	-	-	EXT MEMORY DATA BIT10
68	VSS33	DGND	-	-	DIGITAL GND FOR PADS
69	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
70	D4	D4	-	-	EXT MEMORY DATA BIT4
71	D3	D3	-	-	EXT MEMORY DATA BIT3
72	D11	D11	-	-	EXT MEMORY DATA BIT11
73	RSTIN	RESET	IN	LOW	MICOM HARDWARE RESET
74	P3.0/SCL0	SCL2	IN/OUT	-	EEPROM CONTROL SERIAL CLOCK LINE
75	P3.1/SDA0	SDA2	IN/OUT	-	EEPROM CONTROL SERIAL DATA LINE
76	P3.2/CAPIN	IR	IN	-	REMOCON IN
77	P3.3/T3OUT	SUB POWER	OUT	LOW	SUB POWER PORT ON/OFF CONTROL(FOR PVR)
78	P3.4/T3EUD	MAIN POWER	OUT	LOW	MAIN POWER PORT ON/OFF CONTROL
79	P3.5/T4IN	DVR RESET	OUT	LOW	DVR BOARD RESET
80	P3.6/T3IN	WP	IN	LOW	IIC STOP & EEPROM WRITE PROTECTION
81	P3.7/T2IN	S-RESET	OUT	LOW	MSP34XX / DPL3519 & AC3 HARDWARE RESET CONTROL
82	P3.8/MRST	S-MUTE	OUT	HIGH	SOUND AMP MUTE
83	P3.9/MTSR	NC	-	-	
84	VSS33	DGND	-	-	DIGITAL GND FOR PADS
85	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
86	VSS25	DGND	-	-	DIGITAL GND FOR DIGITAL CORE
87	VDD25	2.5V	-	-	DIGITAL VCC FOR DIGITAL CORE
88	P3.10/TXD0	D-COIL	OUT	HIGH	DEGAUSSING COIL CONTROL
89	P3.11/RXD0	V_RESET	OUT	HIGH	SNI RESET FOR VIDEO PROCESSING IC
90	P3.12/LED1	LED1	OUT	HIGH	STAND-BY LED CONTROL
91	P3.13/SCLK	LED2	OUT	HIGH	TIMER LED CONTROL
92	P3.15/LED2	S3PRESET	OUT	HIGH	S3P9428 RESET
93	P5.14/T4EUD	NC	-	-	
94	P5.15/T2EUD	NC	-	-	
95	P6.0/TRIG_IN	BRK-IN	IN	-	JTAG BRK IN
96	P6.1/TRIG_OUT	BRK-OUT	OUT	-	JTAG BRK OUT
97	P6.2/SDA01	NC	-	-	
98	P6.3/SCL01	SCL1	IN/OUT	-	SLAVE IC CONTROL SERIAL CLOCK LINE
99	P6.4/SDAI1	SDA1	IN/OUT	-	SLAVE IC CONTROL SERIAL DATA LINE
100	P6.5/SCLI1	SCL3	IN/OUT	-	IIC3 CONTROL CLOCK

NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	EXPLANATION
101	P6.6/SDA2	SDA3	IN/OUT	-	IIC3 CONTROL DATA
102	VSYNC/VCS	V-SYNC	IN	HIGH	MAIN PICTURE VERTICAL SYNC IN FOR OSG POSITION
103	HSYNC	H-SYNC	IN	HIGH	MAIN PICTURE HORIZONTAL SYNC IN FOR OSG POSITION
104	COR/RSTOUT	H/T	OUT	HIGH	HALFTONE SIGNAL OUT(NC)
105	BLANK/CORBLA	OSD-F/B	OUT	-	OSD F/B & HALFTONE SIGNAL OUT
106	VDD33	3.3V	-	-	DIGITAL VCC FOR PADS
107	VSS33	DGND	-	-	DIGITAL GND FOR PADS
108	XTAL1	XTAL-IN	IN	-	MICOM CRISTAL OSC IN(6MHZ)
109	XTAL2	XTAL-OUT	OUT	-	MICOM CRISTAL OSC OUT(6MHZ)
110	VSSA	AGND	-	-	ANALOG GND
111	VDDA	2.5V	IN	-	STD-BY ANALOG POWER
112	R	OSD-R	OUT	-	2 LAYER OSG RED OUT
113	G	OSD-G	OUT	-	2 LAYER OSG GREEN OUT
114	B	OSD-B	OUT	-	2 LAYER OSG BLUE OUT
115	VSSA	AGND	-	-	ANALOG GND
116	VDDA	2.5V	IN	-	ANALOG POWER
117	CVBS2	GND	-	-	CVBS2 GND
118	VSSA	AGND	-	-	ANALOG GND
119	VDDA	2.5V	IN	-	ANALOG POWER
120	CVBS1B	GND	-	-	CVBS1 GND WITH 75 ohm
121	CVBS1A	TTX-CVBS	IN	-	CVBS INPUT FOR TELETEXT DECODING
122	VSSA	AGND	-	-	ANALOG GND
123	VDDA	2.5V	IN	-	ANALOG POWER FOR ADC
124	P5.0/AN.0	KEY1	IN	-	VOLUME UP/DOWN, CHANNEL UP/DOWN KEY IN
125	P5.1/AN.1	KEY2	IN	-	MENU, TV/VIDEO, NT POWER KEY IN
126	P5.2/AN.2	M-AFT	IN	-	MAIN TUNER AFT VOLTAGE
127	P5.3/AN.3	NC	-	-	-
128	TMODE	GND	-	-	GND WITH 10K ohm IN NORMAL CONDITION

1-2-5 S3P9428 PINNING(I/O EXPANDER)

NO	PIN NAME	FUNCTION	ASSIGN	*IN/OUT*	ACTIVE	EXPLANATION
1	VSS	GND	GND	-	-	-
2	XIN	X-TAL IN	X-TAL IN	-	-	12MHZ
3	XOUT	X-TAL OUT	X-TAL OUT	-	-	
4	TEST		GND	-	-	-
5	P0.1	I/O	HEADPHONE-ID	IN	LOW	H.P JACK ID
6	P0.0	I/O	VGA-ID	IN	LOW	VGE SIGNAL ID
7	RESET	RESET	RESET	IN	LOW	S3P9428 MICOM RESET
8	P3.0	S_RESET2	RESET	OUT	LOW	MSP3410 RESET
9	P3.2	Output	SPOT	OUT	HIGH	SPOT KILLER
10	P2.0	I/O,ADC	MT SW1	OUT		MAIN TUNER S/W
11	P2.1	I/O,ADC	MT SW2	OUT		MAIN TUNER S/W
12	P2.2	I/O,ADC	PT SW1	OUT		PIP TUNER S/W
13	P2.3	I/O,ADC	PT SW2	OUT		PIP TUNER S/W
14	P2.4	I/O,ADC	HDD_TEMP	IN	-	Inside Temperature A/D Input CHECK
15	P2.5	ADDRESS	GND	-	-	ADDRESS GND
16	AVSS	ANALOG GND	GND	-	-	ANALOG GND
17	AVREF	ADC REF	ADC REF	-	-	ADC REF
18	P2.6	SDA	SDA2	-	-	IIC CONTROL
19	P2.7	SCL	SCL2	-	-	
20	P1.3	I/O,PWM	TILT	OUT	PWM	-
21	P1.2	I/O	DEF SW3	OUT	HIGH/LOW	DTV / RF SIGNAL SWITCH
22	P1.1	I/O	DEF SW1	OUT		CXA2156 DEFLECTION FREQUENCY CONTROL
23	P1.0	I/O	DEF SW2	OUT		CXA2156 DEFLECTION FREQUENCY CONTROL
24	P3.3	Output	F/B SW1	OUT	HIGH	MSP4450G D/A OUT PIN
25	P3.1	Output	F/B SW2	OUT	HIGH	MSP4450G D/A OUT PIN
26	P0.7	I/O,ADC,PWM	SC3-ID(AV3/AV3S-ID)	IN	LEVEL CHANGE	AV3 SIGNAL ID
27	P0.6	I/O,ADC	SC1-ID(AV1/DVD1-ID)	IN		AV1/EVE1 SIGNAL ID
28	P0.5	I/O,ADC	SC2-ID (AV2)	IN		AV2 SIGNAL ID
29	P0.4	I/O,ADC	FAV-ID/FS-ID	IN		FAV/F S-VHS SIGNAL ID
30	P0.3	I/O	DTV/DVD2-ID	IN	HIGH	DVD2/DTV SIGNAL ID
31	P0.2	I/O	1080i SW	OUT	LOW	DTV 1080i MODE S/W
32	VDD	5V	STD 5V	-	-	SYSTEM YCC

1-2-6 ADC INPUT VOLTAGE

PIN NO	ASSIGN	SCART JACK MODEL OPTION IDENT VOLTAGE(V)			RCA JACK MODEL IDENT VOLTAGE(V)			
		0 ~ 1.5	1.6 ~ 3.4	0 ~ 1.5	0 ~ 2.2	2.3 ~ 2.9	3.0 ~ 4.0	4.1 ~ 5.0
26	SC3-ID(AV3/AV3S-ID)	NOT CON.	WIDE MODE	NOT CON.	AV3 SVHS		NOT CON.	AV3
27	SC1-ID(AV1/DVD1-ID)	NOT CON.	WIDE MODE	NOT CON.	NOT CON.	DVD1	AV1	ALL CON.
28	SC2-ID (AV2)	NOT CON.	WIDE MODE.	NOT CON.	NOT CONNECTION		AV2	
29	FAV-ID/FS-ID	Use the same valtage as RCA option			FRONT-SVHS		NOT CON.	F-VIDEO

1-2-7 MICOM FACTORY MODE OPTION BYTE

ITEM	OPTION BYTE	INITIAL VALUE	Europe	CIS	China	Southeast ASIA	Remark
00	CRT	Wide	Wide	Wide	Wide	Wide	-CPT Option(Wide/4:3):P.Size format, WSS Related Option
01	Language Group	Europe	Europe	Europe	Asia	Asia	-User Optional Language Group Setting(Europe/Asia) -Refer to "Language Group Table"
02	Language	English	English	Russian	Chineses	Country	-Select the language of destination from Language Group * Note: Countermeasute to prevent IRAN from smuggling Once Arabic(Persian)has been selected,the user can't select Persian(Arabic)
03	ATM	On	On	On	Off	Off	-ON: ATM, OFF: Auto search
04	Scart/Rca	Scart	Scart	Scart	RCA	RCA	-SCART: AV-Link,AV Setup Menu, Scart jack switching -RCA: RCA Jack switching, DVD
05	Plug&Play	On	On	On	On	On	-Application of Dolby Prologic((On/Off)
06	Teleweb	Off	On	Off	Off	Off	-Dependin on area.(West Europe : On, East Europe : Off)
07	CS/CW	CS	CW	CS	CS	CS	-CW/CS Tuner switching option
08	Lna	On	On	On	On	On	-Application of LNA(Pinp model) (On/Off)
09	H/P JACK IDENT	HIgh	HIgh	High	High	High	-ON:The main sound is cut off after identigying the headphome jack -OFF:The headphome jack ident PIN of MICOM is used as an IIC STOP PIN. The main sound is not cut off
10	TOP TTX	Off	Off	Off	Off	Off	-Set only the countries requesting TOP patent so that TOP TTX can be available(Countries using TOP:Germany,Austria,Italy,Swiss)
11	High Deviation	Off	Off	Off	Off	Off	-Solve the Sound Stop problem by tutning High Deviation On for the countries with SOUND over modulation
12	TTX Group	W-Europe	W-Europe	Russian	W-Europe	W-Europe	-Grouping the TTX Language by Region:Refer to a separate TABLE
13	Carrier Mute	Off	Off	Off	Off	Off	-For Italy Only (Option)
14	P . Standard	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	-Mode of Picture Statues
15	Digital NR	On	On	On	Off	Off	-Application of Digital Noise Reduction(On/Off)
16	Speaker Include?	Yes	Yes	Yes	Refer to Remark		-Different by Cabinet(Z10:Yes, A10:No)
17	AGC	Off	Off	Off	Off	Off	-Automatic Gain Control
18	DNIe	Off	On	On	On	On	-Digital Natural Image engine
19	DVR	On	Off	Off	On	On	-DVR on/off
20	SAMSUNG LOGO	On	On	On	On	On	-AV mode No signal
21	Auto format	Off	On	Off	Off	Off	- Auto format

1-3 FACTORY MODE CONTROL

1-3-1 Factroy Mode Data Control

1. Enter & Concel the Factory Mode
   1) Usual Remote Control
   Enter : PICTURE OFF -> DISPLAY KEY -> MENU KEY -> MUTE KEY
   (Press each remote control key with in 3 seconds)
   Cannel : POWER OFF -> ON
   2) Factory Remote Control
   Enter : DISPLAY KEY -> FACTORY KEY
   (Press each remote control key with in 3 seconds)
   Cannel : POWER OFF -> ON
   Press the FACTORY key twice at intervals of at lease 1 second.
   (Enter the AGING Mode once)
   3) Set Value When Entering the Factory Mode
   - Picture Mode & Sound Mode are set to the dynamic mode data
   - Scan Mode : Natual Scan(NT/PAL All)
   - Brigntness : 50 Contrast : 90 Bright : 50 Color : 50
   sharpness : 60 Color tone : Center
   4) Adjustments
   - CH. UP/DOWN Key : Use to select the item you want
   - VOLUME UP/DOWN Key : Increases or decreases the value of data.
   - MENU Key : Use to save the current set value in EEPROM and exit to the upper mode.
   - Use the DIGIT Key to switch channels
   - Use the TV/VIDEO Key th conver to the AV Mode

1-4 FACTORY ADJUSTMENT DATA

OPTION BYTE 1
OPTION BYTE 2
DEFLECTION (PAL/NTSC)
480p OFFSET
1080i OFFSET
VGA OFFSET
VIDEO ADJUST1
VIDEO ADJUST2
VIDEO ADJUST3
VIDEO DJUST DNIe
VGA ADJUST
DTV ADJUST
Y.C-DELAY
EEPROM
RESET

Option byte 1

Item	OSD	Change mode	Initial value	
			CIS(32Z10)	Europe(32z10)
00	CRT	WIDE / 4:3	WIDE	WIDE
01	Language Group	Europe / Asia	Europe	Europe
02	Language	language table	Russian	English
03	ATM	On / Off	On	On
04	Scart/RCA	SCART / RCA	Scart	Scart
05	Plug&Play	On / Off	On	On
06	TeleWeb	On / Off	off	On
07	CW/CS	CS/CW	CS	CW
08	LNA	On / Off	On	On
09	HJack Ident	High / Low	High	High
10	TOP TTX	On / Off	Off	Off
11	High Deviation	On / Off	Off	Off
12	TTX Group	W-Europe(Refer to Table)	OSD Language	OSD Language
13	Carrier Mute	On / Off	Off	Off
14	P.Standard	Dynamic/Standard/Movie/Custom	Dynamic	Dynamic
15	Digital NR(Shipping conditions)	On / Off	On	On
16	Speaker Include?	Yes/No	Yes	Yes
17	AGC	On/Off	Off	Off
18	DNIe	On/Off	On	On
19	DVR	On/Off	On	On

✵ CRT : 1. 4 : 3 2. WIDE(16:9)
✵ Language Group : 1. Europe 2. Asia
✵ Europe Language Select
; Greece, Netherland, Germany, CIS, Rumania, Bulgaria, Sweden, Spain, Yougslavia, Italy, Czecho, Croatia, Turkey, Portugal, Poland, France, Hungary, England

✵ Asia Language Select
; U.S.A, France, Malaysia, Indonesia, Arab, Persia

✵ ATM Select
ON : Greece, Netherland, Germany, CIS, Rumania, Bulgaria, Sweden, Spain, Yougslavia, Italy, Czecho, Croatia, Turkey, Portugal, Poland, France, Hungary, England
OFF : Others Country

✵ TOP TTX Select
ON : Germany
OFF : Others Country

✵ TTX Group
; W-Europe, E-Europe, Russian, Arabic, Hebrew, OSD Language.

Option byte 2

Item	Option byte 2	Change mode	Initial value	
00	SAMSUNG LOGO	ON/OFF(AV MODE NO SIGNAL)	On	On
02	AUTO FORMAT	ON/OFF	Off	On

Deflection Adjustment(PAL)

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	V Amp	CXA2165 [16(7:2)]	0~63	26	Adjust
01	V Shift	CXA2165 [24(7:2)]	0~63	24	Adjust
02	H EW	CXA2165 [19(7:2)]	0~63	41	Adjust
03	H Shift	CXA2165 [1E(7:2)]	0~63	18	Adjust
04	V Linearity	CXA2165 [18(7:4)]	0~15	10	FIX
05	Upper-Linearity	CXA2165 [25(7:4)]	0~15	6	FIX
06	Lower-Linearity	CXA2165 [25(3:0)]	0~15	1	FIX
07	V SC	CXA2165 [18(3:0)]	0~15	0	FIX
08	H Parablar	CXA2165 [2A(3:0)]	0~63	27	Adjust
09	Upper Corner	CXA2165 [1B(7:4)]	0~63	23	Adjust
10	Lower Corner	CXA2165 [1C(7:4)]	0~63	34	Adjust
11	H trapezium	CXA2165 [2D(7:2)]	0~63	34	Adjust
12	Bow	CXA2165 [1F(7:4)]	0~63	31	Adjust
13	Angle	CXA2165 [20(3:0)]	0~63	28	Adjust
14	V Position	CXA2165 [17(7:2)]	0~63	40	FIX
15	CXA 2165 sub01		0~255	232	FIX
16	CXA 2165 sub02		0~255	97	FIX

Deflection Adjustment(NTSC)

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	V Amp	CXA2165 [16(7:2)]	-63~63	2	Adjust
01	V Shift	CXA2165 [24(7:2)]	-63~63	-2	Adjust
02	H EW	CXA2165 [19(7:2)]	-63~63	0	Adjust
03	H Shift	CXA2165 [1E(7:2)]	-63~63	9	Adjust
04	V Linearity	CXA2165 [18(7:4)]	-15~15	-4	FIX
05	Upper-Linearity	CXA2165 [25(7:4)]	-15~15	-1	FIX
06	Lower-Linearity	CXA2165 [25(3:0)]	-15~15	3	FIX
07	V SC	CXA2165 [18(3:0)]	-15~15	0	FIX
08	H Parablar	CXA2165 [2A(3:0)]	-63~63	4	Adjust
09	Upper Corner	CXA2165 [1B(7:4)]	-63~63	3	Adjust
10	Lower Corner	CXA2165 [1C(7:4)]	-63~63	-1	Adjust
11	H trapezium	CXA2165 [2D(7:2)]	-63~63	2	Adjust
12	Bow	CXA2165 [1F(7:4)]	-63~63	0	Adjust
13	Angle	CXA2165 [20(3:0)]	-63~63	0	Adjust
14	V Position	CXA2165 [17(7:2)]	-63~63	0	FIX
15	CXA 2165 sub01		0~255	232	FIX
16	CXA 2165 sub02		0~255	97	FIX

Deflection Normal(480p)

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	V Amp	CXA2165 [16(7:2)]	0~63	0	Adjust
01	V Shift	CXA2165 [24(7:2)]	0~63	4	Adjust
02	H EW	CXA2165 [19(7:2)]	0~63	3	Adjust
03	H Shift	CXA2165 [1E(7:2)]	0~63	-5	Adjust
04	V Linearity	CXA2165 [18(7:4)]	0~15	0	FIX
05	Upper-Linearity	CXA2165 [25(7:4)]	0~15	0	FIX
06	Lower-Linearity	CXA2165 [25(3:0)]	0~15	0	FIX
07	V SC	CXA2165 [18(3:0)]	0~15	0	FIX
08	H Parablar	CXA2165 [2A(3:0)]	0~63	0	Adjust
09	Upper Corner	CXA2165 [1B(7:4)]	0~63	0	Adjust
10	Lower Corner	CXA2165 [1C(7:4)]	0~63	0	Adjust
11	H trapezium	CXA2165 [2D(7:2)]	0~63	0	Adjust
12	Bow	CXA2165 [1F(7:4)]	0~63	0	Adjust
13	Angle	CXA2165 [20(3:0)]	0~63	0	Adjust
14	V Position	CXA2165 [17(7:2)]	0~63	0	Adjust
15	CXA 2165 sub01		0~255	232	FIX
16	CXA 2165 sub02		0~255	97	FIX

Deflection Normal(1080i)

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	V Amp	CXA2165 [16(7:2)]	0~63	-13	Adjust
01	V Shift	CXA2165 [24(7:2)]	0~63	-3	Adjust
02	H EW	CXA2165 [19(7:2)]	0~63	12	Adjust
03	H Shift	CXA2165 [1E(7:2)]	0~63	13	Adjust
04	V Linearity	CXA2165 [18(7:4)]	0~15	0	FIX
05	Upper-Linearity	CXA2165 [25(7:4)]	0~15	0	FIX
06	Lower-Linearity	CXA2165 [25(3:0)]	0~15	0	FIX
07	V SC	CXA2165 [18(3:0)]	0~15	0	FIX
08	H Parablar	CXA2165 [2A(3:0)]	0~63	0	Adjust
09	Upper Corner	CXA2165 [1B(7:4)]	0~63	0	Adjust
10	Lower Corner	CXA2165 [1C(7:4)]	0~63	0	Adjust
11	H trapezium	CXA2165 [2D(7:2)]	0~63	0	Adjust
12	Bow	CXA2165 [1F(7:4)]	0~63	0	Adjust
13	Angle	CXA2165 [20(3:0)]	0~63	0	Adjust
14	V Position	CXA2165 [17(7:2)]	0~63	0	FIX
15	CXA 2165 sub01		0~255	232	FIX
16	CXA 2165 sub02		0~255	97	FIX

VGE Defletion

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	Y Amp	CXA2165 [16(7:2)]	0~63	25	Adjust
01	Y Shift	CXA2165 [17(7:2)]	0~63	25	Adjust
02	H EW	CXA2165 [19(7:2)]	0~63	25	Adjust
03	H Shift	CXA2165 [1E(7:4)]	0~63	35	Adjust
04	Y Linearity	CXA2165 [18(7:2)]	0~15	10	FIX
05	Upper - Linearity	CXA2165 [25(7:2)]	0~15	06	FIX
06	Lower - Linearity	CXA2165 [25(7:2)]	0~15	01	FIX
07	Y SC	CXA2165 [18(7:2)]	0~15	00	FIX
08	H Parablar	CXA2165 [1A(7:2)]	0~63	27	Adjust
09	Upper Corner	CXA2165 [1B(7:2)]	0~63	23	Adjust
10	Lower Corner	CXA2165 [1C(7:4)]	0~63	34	Adjust
11	H Trapezium	CXA2165 [1D(7:2)]	0~63	34	Adjust
12	Bow	CXA2165 [1F(7:2)]	0~63	31	Adjust
13	Angle	CXA2165 [20(1:0)]	0~63	28	Adjust
14	Y Position	CXA2165 [24(1:0)]	0~63	40	FIX
15	CXA 2165 sub01	CXA2515 8C [01(7:0)]	0~255	0	FIX
16	CXA 2165 sub02	CXA2515 8C [02(7:0)]	0~255	108	FIX

Video Adjustment1

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	R Cutoff	CXA2165 [0A(7:2)]	0~63	34	Adjust
01	01 G Cutoff	CXA2165 [0B7:2)]	0~63	32	FIX
02	B Cutoff	CXA2165 [0C(7:2)]	0~63	32	Adjust
03	Color On/Off	CXA2165 [1E(7:4)]	0~01	1	FIX
04	CR Offset	CXA2165 [OF(7:2)]	0~63	32	FIX
05	CB Offset	CXA2165 [10(7:2)]	0~63	32	FIX
06	R Drive	CXA2165 [06(7:2)]	0~63	40	Adjust
07	G Drive	CXA2165 [07(7:2)]	0~63	32	FIX
08	B Drive	CXA2165 [08(7:2)]	0~63	36	Adjust
09	Sub Bright	CXA2165 [09(7:2)]	0~63	34	Adjust
10	Sub Contrast	CXA2165 [0D(7:4)]	0~15	6	Adjust
11	Sub Color	CXA2165 [03(7:2)]	0~23(?)	15	FIX
12	Sub Tint(Hue)	CXA2165 [02(7:2)]	0~63	28	FIX
13	CTI Level	CXA2165 [03(1:0)]	0~03	1	FIX
14	Color AXIS	CXA2165 [02(1:0)]	0~03	1	FIX
15	LTI Level	CXA2165 [05(1:0)]	0~03	2	FIX
16	TTX BRT	CXA2165 [06(7:2)]	0~63	10	FIX

Video Adjustment2

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	ABL Mode	CXA2165 [07(1:0)]	0~03	3	FIX
01	Gamma	CXA2165 [09(1:0)]	0~03	2	FIX
02	DPIC Level	CXA2165 [0B(1:0)]	0~03	2	FIX
03	DC Trans	CXA2165 [0C(1:0)]	0~03	2	FIX
04	ABL-TH	CXA2165 [OE(3:0)]	0~15	14	FIX
05	VM-Level	CXA2165 [11(3:2)]	0~03	1	FIX
06	VM-Coring	CXA2165 [13(7:6)]	0~03	2	FIX
07	VM-f0	CXA2165 [13(5:4)]	0~03	2	FIX
08	VM-Limit	CXA2165 [13(3:2)]	0~03	2	FIX
09	VM-Delay	CXA2165 [13(1:0)]	0~03	3	FIX
10	SHP CD	CXA2165 [12(7:6)]	0~03	1	FIX
11	SHP f0	CXA2165 [11(1)]	0~01	0	FIX
12	SHP f1&p/o	CXA2165 [12(3:0)]	0~15	8	FIX
13	AKB Time	CXA2165 [14(7:4)]	0~31(?)	13	FIX
14	Coring	VSP 9407[02(11:12)]	0~01	0	FIX
15	Peaking	VSP 9407[25(14:10)]	0~31	17	FIX
16	Bandpass	VSP 9407[49(14:10)]	0~127	32	FIX
17	Highpass	VSP 9407[4A(14:10)]	0~127	35	FIX
18	Bandpass	VSP 9407[49(14:10)]	0~127	32	FIX
19	Highpass	VSP 9407[4A(14:10)	0~127	35	FIX

Video Adjustment3

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	H_EHT comp	CXA2165 [26(3:0)]	0~15	8	FIX
01	V_EHT comp	CXA2165 [26(7:4)]	0~15	5	FIX
02	PIN EHT comp	CXA2165 [28(2:0)]	0~07	0	FIX
03	AFC EHT comp	CXA2165 [29(2:0)]	0~07	0	FIX
04	sync phase	CXA2165 [1E(0)]	0~1	0	FIX
05	NR Value	VSP 9407	0~09	6	FIX
06	Sync Phase(480)	CXA2165 [1E(0)]	0~1	1	FIX
07	Sync Phase(1080)	CXA2165 [1E(0)]	0~1	1	FIX
08	Sync Phase(VGA)	CXA2165 [1E(0)]	0~1	1	FIX

Video Adjustment DNIe

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	AD9883 R GAIN	AD9883 [08(7:0)]	0~255	185	FIX
01	AD9883 G GAIN	AD9883 [09(7:0)]	0~255	185	FIX
02	AD9883 B GAIN	AD9883 [0A(7:0)]	0~255	185	FIX
03	AD9883 R OFFSET	AD9883 [0B(7:1)]	0~127	61	Adjust
04	AD9883 G OFFSET	AD9883 [0C(7:1)]	0~127	64	FIX
05	AD9883 B OFFSET	AD9883 [0D(7:1)]	0~127	63	Adjust
06	AD9883_NORMAL_REG05	AD9883 [05(7:0)]	0~255	20	FIX
07	AD9883_NORMAL_REG06	AD9883 [06(7:0)]	0~255	20	FIX
08	AD9883_1080i_REG05	AD9883 [05(7:0)]	0~255	3	FIX
09	AD9883_1080i_REG06	AD9883 [06(7:0)]	0~255	7	FIX
10	AD9883_1080i_50_REG05	AD9883 [05(7:0)]	0~255	3	FIX
11	AD9883_1080i_60_REG06	AD9883 [06(7:0)]	0~255	7	FIX
12	AD9883_480P_50_REG05	AD9883 [05(7:0)]	0~255	32	FIX
13	AD9883_480P_60_REG06	AD9883 [06(7:0)]	0~255	32	FIX
14	AD9883_576P_50_REG05	AD9883 [05(7:0)]	0~255	32	FIX
15	AD9883_576P_60_REG06	AD9883 [06(7:0)]	0~255	32	FIX

DNIe Enhancement Adjustment

	FACTORY MODE NAME	CONTROL REGISTER	RANGE	Initial value (DECIMAL)	Remark
DETAIL ENHANCE	SNI DETAIL ENHANCE CORING	R'311 LOW	0~63	0	
	SNI DETAIL ENHANCE NOISE DETECT GAIN	R'316 LOW	0~15	8	
	SNI DETAIL ENHANCE GAIN	R'317 LOW	0~127	36	
CONTRAST ENHANCE	SNI CONTRAST ENHANCE CUTOFF	R'2B0 HIGH	0~255	74	
	SNI CONTRAST ENHANCE UPPER	R'2B0 LOW	0~255	196	
	SNI CONTRAST ENHANCE LOWER GAIN	R'2B3 HIGH	0~255	45	LOW/HIGH same value setting.
	SNI CONTRAST ENHANCE UPPER GAIN	R'2B3 LOW	0~255	45	
NOISE REDUCTION	SNI NOISE REDUCTION Y-GAINMAX	R'293 HIGH	0~255	48	
	SNI NOISE REDUCTION Y-GAINMIN	R'294 HIGH	0~255	16	
BWS	SNI BLACK STRETCH GAIN	R'331 HIGH	0~255	46	
	SNI WHITE STRETCH GAIN	R'332 HIGH	0~255	46	
	SNI BLACK and WHITE STRETCH ON/OFF	R'330 HIGH	0~3	0	BIT[4,0]
	0 : BLACK/WHITE OFF, 1 : WHITE ON, 2 : BLACK ON, 3 : BLACK/WHITE ON				
CTE	SNI COLOR ENHANCE GAIN	R'352 LOW	0~255	192	

VGA Adjust

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	Sub Bright	CXA2165 [09(7:2)]	0~63	0	Adjust
01	Sub Contrast	CXA2165 [0D(7:4)]	0~15	0	Adjust
02	Sub Color	CXA2165 [03(7:2)]	0~23	0	FIX
03	Sub Tint	CXA2165 [02(7:2)]	0~63	0	FIX
04	Color AXIS	CXA2165 [02(1:0)]	0~03	0	FIX
05	LTI Level	CXA2165 [05(1:0)]	0~03	0	FIX
06	VM Level	CXA2165 [11(3:2)]	0~03	0	FIX
07	VM Coring	CXA2165 [13(7:6)]	0~03	0	FIX
08	VM f0	CXA2165 [13(5:4)]	0~03	0	FIX
09	VM Limit	CXA2165 [13(3:2)]	0~03	0	FIX
10	VM Delay	CXA2165 [13(1:0)]	0~03	0	FIX
11	SHP CD	CXA2165 [12(7:6)]	0~03	0	FIX
12	SHP f0	CXA2165 [11(1)]	0~01	0	FIX
13	SHP f0 & p10	CXA2165 [12(3:0)]	0~15	0	FIX

DTV Adjust(1080i)

Item	OSD	Resister[HEX]	Range	IInitial value	Remark
00	Sub Bright	CXA2165 [09(7:2)]	0~63	38	Adjust
01	Sub Contrast	CXA2165 [0D(7:4)]	0~15	7	Adjust
02	Sub Color	CXA2165 [03(7:2)]	0~23	15	FIX
03	Sub Tint	CXA2165 [02(7:2)]	0~63	28	FIX
04	Color AXIS	CXA2165 [02(1:0)]	0~03	1	FIX
05	LTI Level	CXA2165 [05(1:0)]	0~03	1	FIX
06	VM Level	CXA2165 [11(3:2)]	0~03	1	FIX
07	VM Coring	CXA2165 [13(7:6)]	0~03	2	FIX
08	VM f0	CXA2165 [13(5:4)]	0~03	2	FIX
09	VM Limit	CXA2165 [13(3:2)]	0~03	2	FIX
10	VM Delay	CXA2165 [13(1:0)]	0~03	3	FIX
11	SHP CD	CXA2165 [12(7:6)]	0~03	1	FIX
12	SHP f0	CXA2165 [11(1)]	0~01	0	FIX
13	SHP f0 & p10	CXA2165 [12(3:0)]	0~15	8	FIX

DTV Adjust(480p)

Item	OSD	Resister[HEX]	Range	IInitial value	Remark
00	Sub Bright	CXA2165 [09(7:2)]	0~63	38	Adjust
01	Sub Contrast	CXA2165 [0D(7:4)]	0~15	7	Adjust
02	Sub Color	CXA2165 [03(7:2)]	0~23	15	FIX
03	Sub Tint	CXA2165 [02(7:2)]	0~63	28	FIX
04	Color AXIS	CXA2165 [02(1:0)]	0~03	1	FIX
05	LTI Level	CXA2165 [05(1:0)]	0~03	2	FIX
06	VM Level	CXA2165 [11(3:2)]	0~03	1	FIX
07	VM Coring	CXA2165 [13(7:6)]	0~03	2	FIX
08	VM f0	CXA2165 [13(5:4)]	0~03	2	FIX
09	VM Limit	CXA2165 [13(3:2)]	0~03	2	FIX
10	VM Delay	CXA2165 [13(1:0)]	0~03	3	FIX
11	SHP CD	CXA2165 [12(7:6)]	0~03	1	FIX
12	SHP f0	CXA2165 [11(1)]	0~01	0	FIX
13	SHP f0 & p10	CXA2165 [12(3:0)]	0~15	8	FIX

YC Delay

Item	OSD	Resister[HEX]	Range	Initial value	Remark
00	P.YC(AV) DELAY	VSP9407[6B(12:8)]	-16~15	2	Adjust
01	P.YC(AV) DELAY	VSP9407[6B(12:8)]	-16~15	-5	Adjust
02	P.YC(AV) DELAY	VSP9407[6B(12:8)]	-16~15	4	Adjust
03	P.BG.YC DELAY	VSP9407[6B(12:8)]	-16~15	4	FIX
04	P.DK.YC DELAY	VSP9407[6B(12:8)]	-16~15	-1	Adjust
05	P.I.YC DELAY	VSP9407[6B(12:8)]	-16~15	1	Adjust
06	P.60.YC DELAY	VSP9407[6B(12:8)]	-16~15	0	Adjust
07	P.L.YC DELAY	VSP9407[6B(12:8)]	-16~15	0	Adjust
08	S.BG.YC DELAY	VSP9407[07(12:8)]	-16~15	-6	Adjust
09	S.DK.YC DELAYt	VSP9407[07(12:8)]	-16~15	-7	Adjust
10	S.I.YC DELAY	VSP9407[07(12:8)]	-16~15	-9	Adjust
11	S.L.YC DELAY	VSP9407[07(12:8)]	-16~15	0	Adjust
12	NT4.43.YC DELAY	VSP9407[07(12:8)]	-16~15	-5	FIX
13	N.M.YC DELAY	VSP9407[6B(12:8)]	-16~15	0	FIX

EEPROM

Item	OSD	Resister[HEX]	Range	IInitial value	Remark
00	UP-UCG(up corner semi control)	CXA2165 [1B(1:0)]	-2~2	0	FIX
01	LO-UCG(low corner semi control)	CXA2165 [1C(1:0)]	-2~2	0	FIX
02	LTI MODE	CXA2165 [0A(1:0)]		1	FIX
03	System	CXA2165		2	FIX
04	50 hz Progressive Trepezium	CXA2165		5	FIX
05	100 hz Progressive Trepezium	CXA2165		7	FIX
06	Dynamic ColorTone	CXA2165		50	FIX
07	Dynamic Brightness	CXA2165 [09(7:2)]		50	FIX
08	Dynamic Color	CXA2165 [03(7:2)]		50	FIX
09	Dynamic Contrast	CXA2165 [0D(7:4)]		90	FIX
10	Dynamic Sharpness	CXA2165 [05(7:4)]		60	FIX
11	Dynamic Tint	CXA2165 [02(7:4)]		50	FIX
12	Standard ColorTone	CXA2165		50	FIX
13	Standard Brightness	CXA2165 [09(7:2)]		50	FIX
14	Standard Color	CXA2165 [03(7:2)]		50	FIX
15	Standard Contrast	CXA2165 [0D(7:4)]		70	FIX
16	Standard Sharpness	CXA2165 [05(7:4)]		50	FIX
17	Standard Tint	CXA2165 [02(7:4)]		50	FIX
18	Movie ColorTone	CXA2165		50	FIX
19	Movie Brightness	CXA2165 [09(7:2)]		50	FIX
20	Movie Color	CXA2165 [03(7:2)]		45	FIX
21	Movie Contrast	CXA2165 [0D(7:4)]		40	FIX
22	Movie Sharpness	CXA2165 [05(7:4)]		40	FIX
23	Movie Tint	CXA2165 [02(7:4)]		50	FIX
24	PROGRESSIVE TTX V-POSITION	CXA2165		3	FIX
25	PROGRESSIVE TTX H-POSITION	CXA2165		190	FIX
26	System(VGA)	CXA2165		1	FIX
27	LTI Mode(VGA)	CXA2165 [0A(1:0)]		2	FIX
28	Left Blanking(VGA)	CXA2165 [21(7:2)]		195	FIX
29	Right Blanking(VGA)	CXA2165 [22(7:2)]		63	FIX
30	Brightness(RGB)	CXA2165 [09(7:2)]		0	FIX
31	Contrast(RGB)	CXA2165 [0D(7:4)]		177	FIX
32	U Saturation(RGB)	VSP9407[A7(16:10)]		150	FIX
33	V saturation(RGB)	VSP9407 [0D(9:0)]		248	FIX
34	9407 Y Gain	VSP9407		113	93 : Europe
35	9407 U Gain	VSP9407		102	82 : Europe
36	Luminance Delay(Fix)	VSP9407		8	FIX
37	9407 V Gain	VSP9407		101	81 : Europe
38	Start Value of Lum LUT(Main)-NR_ON	VSP9407 [1E(15:12)]		255	FIX

Item	OSD	Resister[HEX]	Range	IInitial value	Remark
39	Noise Reduction(Main)-NR_ON	VSP9407		102	FIX
40	Start Value of Lum LUT(PIP)-NR_ON	VSP9407 [80(15:12)]		255	FIX
41	Noise Reduction(PIP)-NR_ON	VSP9407		102	FIX
42	GMD Hysteresis	VSP9407		28	FIX
43	SECAM Color Sensitivity(Main)	VSP9407		28	FIX
44	FMD Thre	VSP9407 [2B(9:12)]		28	FIX
45	SECAM Color Sensitivity(PIP)	VSP9407		28	FIX
46	Left Blanking	CXA2165 [21(7:2)]		187	FIX
47	Right Blanking	CXA2165 [22(7:2)]		173	FIX
48	S-ABL	CXA2165 [04(1:0)]		0	FIX
49	P-ABL	CXA2165 [0E(7:4)]		48	FIX
50	Start Value of Lum LUT(Main)-NR_OFF	VSP9407		255	FIX
51	Noise Reduction(Main)-NR_OFF	VSP9407 [1E(15:12)]		255	FIX
52	Start Value of Lum LUT(PIP)-NR_OFF	VSP9407		255	FIX
53	Noise Reduction(PIP)-NR_OFF	VSP9407 [80(15:12)]		255	FIX
54	Picture Limit Level	VSP9407		3	FIX
55	OSD LEVEL(LRGB2_LEV)	CXA2165 [0D(3:0)]		7	FIX
56	TX LEVEL(LRGB2_LEV)	CXA2165 [0D(3:0)]		5	FIX
57	Left Blanking (480p)	CXA2165 [21(7:2)]		215	FIX
58	Right Blanking (480p)	CXA2165 [22(7:2)]		169	FIX
59	Left Blanking (1080i)	CXA2165 [21(7:2)]		141	FIX
60	Right Blanking (1080i)	CXA2165 [22(7:2)]		109	FIX
61	System (480p)	VSP9407		0	FIX
62	System (1080i)	VSP9407		0	FIX
63	CrCb Gain (480p)	VSP9407		0	FIX
64	CrCb Gain (1080i)	VSP9407		0	FIX
65	LTI Mode (480p)	CXA2165 [0A(1:0)]		0	FIX
66	LTI Mode (1080i)	CXA2165 [0A(1:0)]		0	FIX
67	TTX V Position	CXA2165		38	FIX
68	TTX H Position	CXA2165		190	FIX
69	16 PIP UPPER CORNER OFF SET	VSP9407		4	FIX
70	16 PIP LOWER CORNER OFF SET	VSP9407		0	FIX
71	4:3 Normal Parabola	CXA2165		0	FIX
72	Brightness(DVD)	CXA2165 [09(7:2)]		190	FIX
73	Contrast(DVD)	CXA2165 [0D(7:4)]		135	FIX
74	U Saturation(DVD)	VSP9407 [A7(16:10)]		150	FIX
75	V saturation(DVD)	VSP9407 [0D(9:0)]		242	FIX
76	SW Filter size	DSP56367	60~220	120	FIX

1-5 Speed, Aging mode & Reset mode

1-5-1 3-Speed

1. 3-Speed
   1) Speed up Analog Conrtol three times and Time Speed sixty times to let line productivity be improved Analog Control.
   2) Enter
   - Display + 3Speed Key
   3) Cancel
   - The 3-Speed mode is cancelled in Master Power Off
   - Press the 3Speed Key
   4) OSD : The message “3-SPEED” appears on the center of screen
   5) No Signal : No AUTO OFF

2. Aging Mode
   1) Enter : DISPLAY KEY -> FACTORY KEY (FACTORY MODE)
   -> FACTORY KEY (AGING MODE)
   - When the AGING mode is entered, the OSD’s are displayed at 100% SIZE WHITE.
   - Mute SOUND
   2) Cancel
   - FACTORY remote conrtol -> Press the FACTORY Key
   - LOCAL KEY -> Use the Key MATRIX (Panel Key)
   - The AGING mode remains even in MASTER S/W OFF -> ON
   Cancel the AGING mode only in the above two cases.

3. Factory Reset
   1) Run “Reset” on the Factory Menu.
   2) Initialize the other user control data except the items that are adjusted in the Factory Mode.
   3) Power Off in standby mode.

1-5-2 Bus Stop Mode & Remote Control Adjustment

1. Bus Stop Mode (Use a Micom Stop Pin)
   1) Enter the Bus Stop Mode within 200ms when 12c Stop Port is acknowledaged “LOW”.
   2) Settings when entering.
   - Set the screen mode “STANDARD”.
   - Set Bus Line Free.
   - Cancal the Bus Stop Mode when 12c Stop Port is acknowledged “High”.
   3) Setting when cancelling
   - Re-load data from EEPROM and then re-set the appropriate IC.

2. Remot Control Adjustment Mode (Factory Auto Adjustment)
   1) Enter the Remote Control Adjustment Mode when the remote control auto adjustment code is input.
   2) Settings when entering.
   - Set the screen mode “STANDARD”
   - Set Bus Line Free.
   3) Cancel the Remote Control Adjustment Mode when the usual key code is input.
   4) When the code is input, write data in both EEPROM and the appropriate IC within 20ms.
   Interval between Code Inputs : 30ms

1-6 INITIALIZATION DATA DURING RESET

Select Reset in the Factory Menu.

Initiate items not adjusted in the Factory mode (User Control Data) and turn off the power switch.

Item	Intialization Data	Item		Initialization Data
Volume	10 Step	Time		- - : - -
Balance	Center	On/Off Time		- - : - -
Main,Pip Channel	P01	H/P Volume		10 Step
Picture Standard	Custom (Set Value:Standard)	H/P Bal.,Tbl,Bass		Center
Sound Standard		Programe naming		All Channel Erased(*)
Scan mode	Nautral			Center
Add/erase	All Channel erased	TTX Source selection		Main
Channel Sort	Erased	Provider select		Erased
LNA	All Channel Off	Power off after download		Yes
Color System	Auto	Boockmark list		Erased
PIP Position	Right under	Zoom Lift		Center
Fine Tune	Erased	Country		Austria
Language	Option byte Selection	Dynamic range		On
Pip,Main Source	RF	Audio out		Volume out
Digital N/R	Option byte Selection	Int. mute		Off
TILT	Center	External audio		Analog
P-Size	Wide:auto,4:3:Normal	Pro Logic		Auto
PIP-Size	Big	Test Tone		Off
TTX Contrast	Factory value	Speaker Setting Size	Main	Small
Child lock	All Channel off		Center	Large
Plug & Play	Option byte Selection		Woofer	On
TeleWeb	Turn on the menu when the option byte is on.		Surround	Large
	Turn off the menu when the option byte is off.	Speaker Setting Level	Center	0dB
			Woofer	0dB
			Surround	0dB
TV Power	Stand by	Speaker Time delay	Center	3
Blue Screen	On		Surround	15
TINT	Center			
Still Picture	Cancellation			
AV Setup	Ext2, Ext3 : RF			

1-7 CHASSIS FUNTION

	FUNTION	PAL
PICTURE	LINE FLICKERLESS	YES
	LARGE AREA FLICKERLESS	YES
	MOTION DETECTOR	YES
	MAIN STILL PICTURE	YES
	ZOOM FUNCTION(4:3)	NORMAL -> ZOOM1-> ZOOM2 -> WIDE
	WIDE CRT OPTION	AUTO WIDE->WIDE->PANORAMA->ZOOM1->ZOOM2->4:3
	ZOOM LIFT	YES
	DIGITAL N/R	YES
	COMB FILTER	4H
	CTI	DIGITAL CTI
	SCAN MODE	NATURAL SCAN -> DIGITAL SCAN -> PORGRESSIVE SCAN
	P-STD	DYNAMIC->STANDARD->MOVIE->CUSTOM
	DYNAMIC-FOCUS	YES
	VM	YES
	TILT CONTROL	YES
	VGA	YES
	DVD	RCA JACK MODEL ONLY -> YUV MODE
	DNIe	YES
	DVR	YES
PIP	MULTI PIP	YES
	LNA ON/OFF	YES
	SWAP,ROTATE,SIZE,SCAN	YES

	FUNTION	PAL
FUNTION	ATM	ATM(EU)
	PLUG & PLAY	YES
	TTX	MEGA TEXT
	OSD TYPE	OSG
	SLEEP TIMER	YES
	ON/OFF TIMER	YES
	CHILD LOCK	YES
	PROGRAMMABLE CH.	100 CH. MENORY
	TUNING SYSTEM	PROGRAMMABLE F/S
	SORT & NAME	YES
	INFORMATION	YES(NAME,SOUND MODE,CHILD LOCK)
	ADD/ERASE	YES(CHANNEL SKIP)
	Teletex Source(option)	YES(CIS/CHINA)
	Teleweb	YES(EUROPE)
SOUND	DOLBY Digital	YES
	A2 STEREO	YES
	EQUALIZER	MAIN:15+15W, SUR:15+15W, CENTER:15W, WOOFER:25W
	NICAM STEREO	CUSTOM->STANDARD->MUSIC->MOVIE->SPEECH
	OUTPUT (MPO)	YES
	DPL Ⅱ	YES
EXT JACK	FRONT	1 S-VHS,1RCA INPUT,1HEADPHONE,1 VGA
	REAR	SCART JACK MODEL : 1RF, 3SCART, DOLBY DIGITAL, 1DVD IN,
		1 OPTICAL INPUT, 1 COAXIAL INPUT
		RCA JACK MODEL : 1RF, 1 S-VHS,3RCA IN, 2DVD
		IN(INCLUDING 1DTV IN), 1OPTICAL INPUT, 1COAXIAL INPUT,
		1DOLBY DIGITAL

1-8 LOCAL KEY ASSIGNMENT

1. Local(Pannel) Key List

- LOCAL MENU : Main Menu Control
- CH + : Channel Up & Menu Control
- CH - : Channel Down & Menu Control
- VOLUME + : Volume Up & Menu Control
- VOLUME - : Volume Down & Menu Control
- TV / VIDEO : TV / VIDEO MODE CHANGE

2. Local Key (7 Bit ADC)

KEY1	KEY NAME	CH. DOWN	CH. UP	VOL. DOWN	VOL .UP	NOT OPER
	VOLTAGE	0V ~ 0.37V	0.58V ~ 0.8V	1.01V ~ 1.2V	1.41V ~ 1.7V	1.91V ~ 2.5V
KEY2	KEY NAME	POWER(NTSC)	LOCAL MENU	TV VIDEO	MUTE	NOT OPER
	VOLTAGE	0V ~ 0.37V	0.58V ~ 0.8V	1.01V ~ 1.2V	1.41V ~ 1.7V	11.91V ~ 2.5V

* Language Group

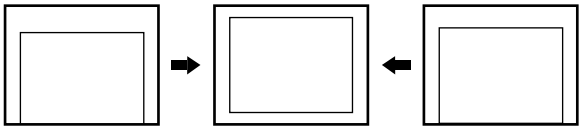
NO	Europe	Asia	Remark
1	English	English	
2	Bulgalian	Arabic	
3	Croatioan	French	
4	Czech	Indonesian	
5	Dutch	Malay	
6	French	Persian	
7	German		
8	Greek		
9	Hungarian		
10	Italian		
11	Polish		
12	Portuguese		
13	Rumanian		
14	Russian		
15	Spanish		
16	Swedish		
17	Turkish		
18	Yogo		

* TTX Language Groutp

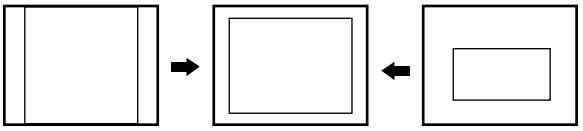
NO	X22 line			Factory mode TTX Group											
				West Europe		East Europe		Turkish/Greek		Russian(Cyrillic)		Arabic		Hebrew	
	C14	C13	C12	Primary	Second	Primary	Second	Primary	Second	Primary	Second	Primary	Second	Primary	Second
0	0	0	0	English	English	Polish	Polish	English	English	English	Russian	English	Arabic	English	Arabic
1	0	0	1	French	French	French	French	French	French	Russian	English	French	Arabic	French	Arabic
2	0	1	0	Skandina-vian	Skandina-vian	Skandina-vian	Skandina-vian	Skandina-vian	Skandina-vian	Estonian	Estonian	-	-	-	-
3	0	1	1	Czech	Czech	Czech	Czech	Turkish	Turkish	Czech	Czech	-	-	-	-
4	1	0	0	German	German	German	German	German	German	German	German	-	-	-	-
5	1	0	1	Spanish	Spanish	Slovenian /Croatian	Slovenian /Croatian	Spanish	Spanish	Ukrainian	Engligh	Hebrew	Arabic	Hebrew	Hebrew
6	1	1	0	Italian	Italian	Italian	Italian	Italian	Italian	Lettish	Lettish	-	-	-	-
7	1	1	1	English	English	Rumanian	Rumanian	Greek	Turkish	Ukrainian	Ukrainian	Arabic	French	Arabic	French
Country				Australia/Austria Belgium/Denmark Finland/France Germany/Holland Hong kong/Iceland Indonesia/Ireland Italy/Luxembourg Malaysia/ New Zealand/ Norway/Portugal S'pore/South Africa Spain/Sweden Switzerland/UK		Czech/Croatia Yugoslavia/Poland Slovak/Hungary		Cyprus/Greece Turkey		Bulgaria/Estonia Latvia/Lituania Russia/Ukrania		Abu Dhabi/ Dubai Egypt/Jordan Kuwait/Oman Qatar/Saudi Arabia		Abu Dhabi/ Dubai Egypt/Jordan Kuwait/Oman Qatar/Saudi Israel	

1-9 Screen Change (I2C Bus Geometric Adjustment)

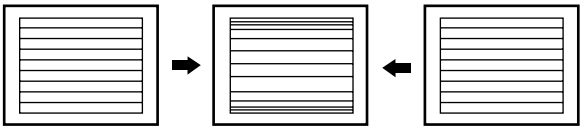
1 V - SHIFT



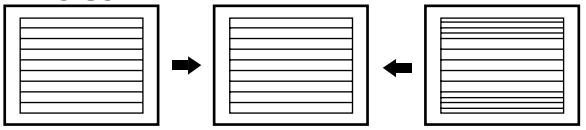
6 V - SIZE



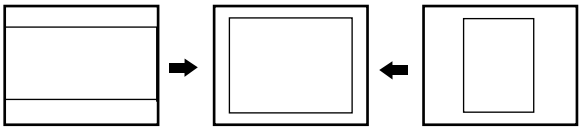
2 V - LIN



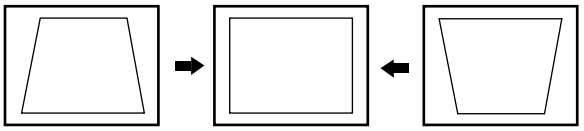
7 S-CORR



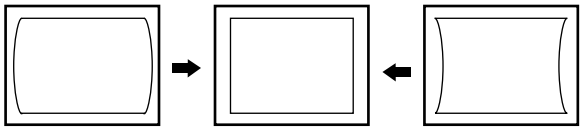
3 HEW- WITH



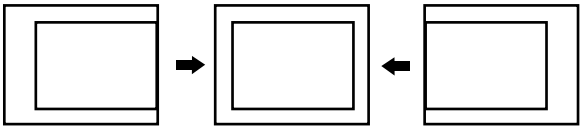
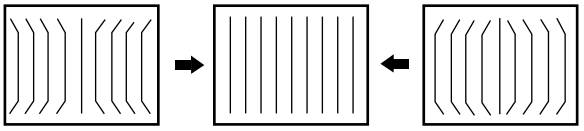
8 H EW-TRAPIZIUM



4 H EW-PARABOLA



9 H SHIFT



5 H BOW